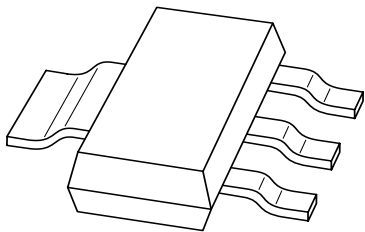


# DATA SHEET



## **PZTA44** NPN high-voltage transistor

Product data sheet  
Supersedes data of 1998 Nov 26

1999 May 21

# NPN high-voltage transistor

# PZTA44

### FEATURES

- Low current (max. 300 mA)
- High voltage (max. 400 V).

### APPLICATIONS

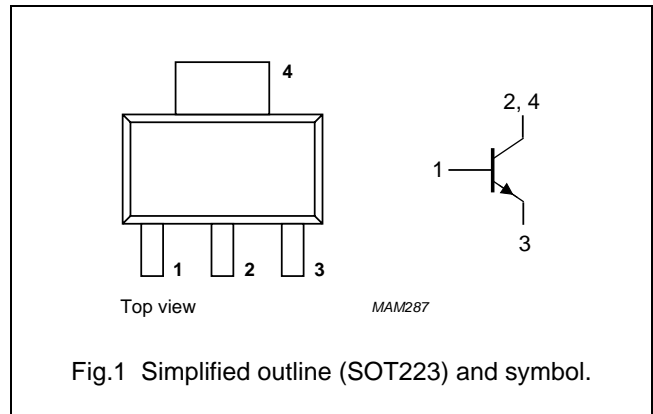
- Telecommunication.

### DESCRIPTION

NPN high-voltage transistor in a SOT223 plastic package.

### PINNING

PIN	DESCRIPTION
1	base
2, 4	collector
3	emitter



### LIMITING VALUES

In accordance with the Absolute Maximum Rating System (IEC 134).

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$V_{CBO}$	collector-base voltage	open emitter	–	500	V
$V_{CEO}$	collector-emitter voltage	open base	–	400	V
$V_{EBO}$	emitter-base voltage	open collector	–	6	V
$I_C$	collector current (DC)		–	300	mA
$I_{CM}$	peak collector current		–	300	mA
$I_{BM}$	peak base current		–	100	mA
$P_{tot}$	total power dissipation	$T_{amb} \leq 25\text{ °C}$ ; note 1	–	1.35	W
$T_{stg}$	storage temperature		–65	+150	°C
$T_j$	junction temperature		–	150	°C
$T_{amb}$	operating ambient temperature		–65	+150	°C

### Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>. For other mounting conditions, see “*Thermal considerations for SOT223 in the General Part of associated Handbook*”.

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## THERMAL CHARACTERISTICS

SYMBOL	PARAMETER	CONDITIONS	VALUE	UNIT
$R_{th\ j-a}$	thermal resistance from junction to ambient	note 1	91	K/W
$R_{th\ j-s}$	thermal resistance from junction to soldering point		10	K/W

## Note

1. Device mounted on a printed-circuit board, single-sided copper, tinplated, mounting pad for collector 1 cm<sup>2</sup>. For other mounting conditions, see "Thermal considerations for SOT223 in the General Part of associated Handbook".

## CHARACTERISTICS

$T_{amb} = 25\text{ °C}$  unless otherwise specified.

SYMBOL	PARAMETER	CONDITIONS	MIN.	MAX.	UNIT
$I_{CBO}$	collector cut-off current	$I_E = 0; V_{CB} = 400\text{ V}$	–	100	nA
		$I_E = 0; V_{CB} = 400\text{ V}; T_j = 150\text{ °C}$	–	10	μA
$I_{EBO}$	emitter cut-off current	$I_C = 0; V_{EB} = 4\text{ V}$	–	100	nA
$h_{FE}$	DC current gain	$V_{CE} = 10\text{ V}$ $I_C = 1\text{ mA}$	40	–	
		$I_C = 10\text{ mA}$	50	200	
		$I_C = 50\text{ mA}; \text{note 1}$	45	–	
		$I_C = 100\text{ mA}; \text{note 1}$	40	–	
$V_{CEsat}$	collector-emitter saturation voltage	$I_C = 1\text{ mA}; I_B = 0.1\text{ mA}$	–	400	mV
		$I_C = 10\text{ mA}; I_B = 1\text{ mA}$	–	500	mV
		$I_C = 50\text{ mA}; I_B = 5\text{ mA}; \text{note 1}$	–	750	mV
$V_{BEsat}$	base-emitter saturation voltage	$I_C = 10\text{ mA}; I_B = 1\text{ mA}; \text{note 1}$	–	850	mV
$C_c$	collector capacitance	$I_E = i_e = 0; V_{CB} = 20\text{ V}; f = 1\text{ MHz}$	–	7	pF
$C_e$	emitter capacitance	$I_C = i_c = 0; V_{EB} = 500\text{ mV}; f = 1\text{ MHz}$	–	180	pF
$f_T$	transition frequency	$I_C = 10\text{ mA}; V_{CE} = 10\text{ V}; f = 100\text{ MHz}$	20	–	MHz

## Note

1. Pulse test:  $t_p \leq 300\text{ μs}; \delta \leq 0.02$ .

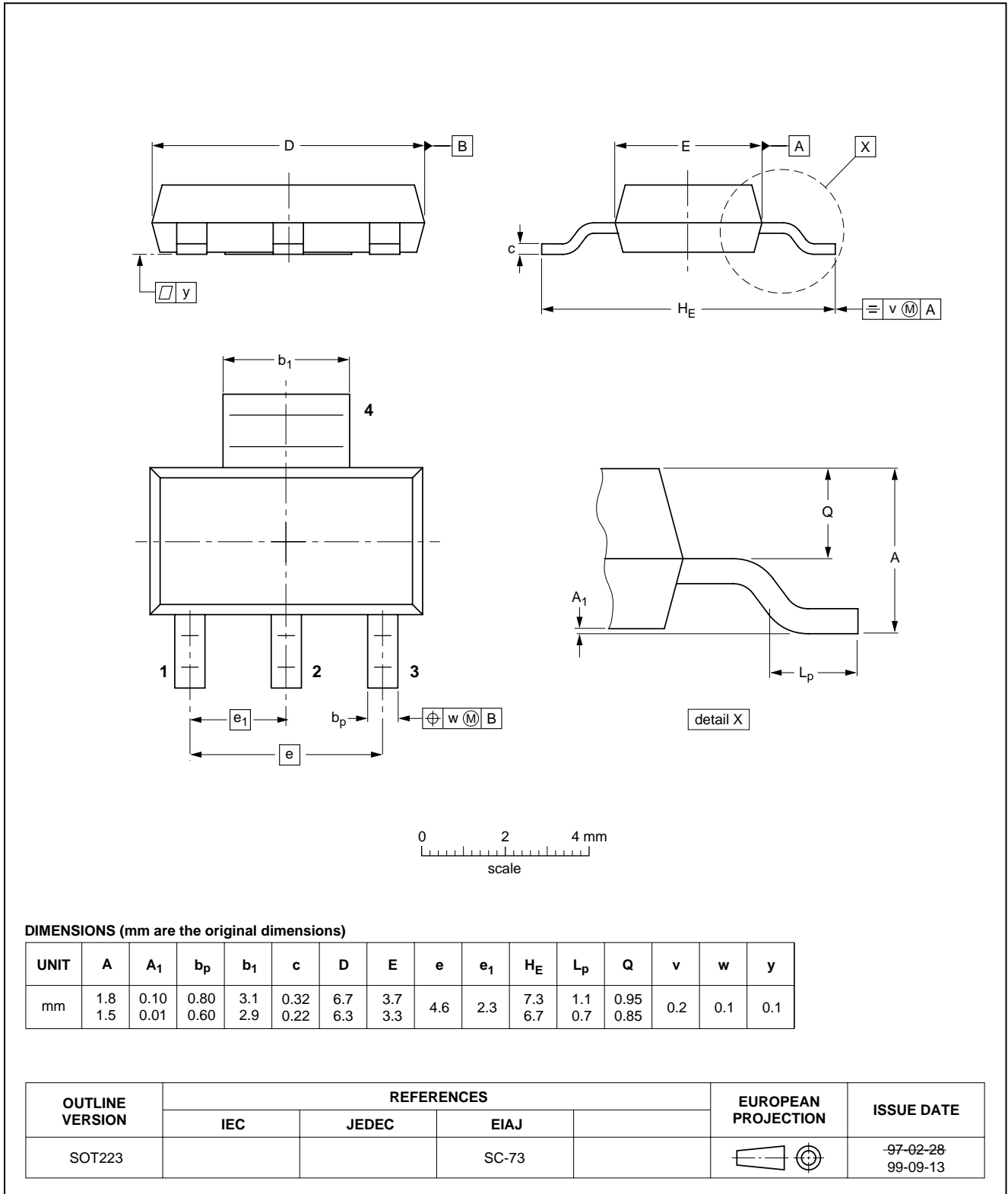
NPN high-voltage transistor

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PACKAGE OUTLINE

Plastic surface mounted package; collector pad for good heat transfer; 4 leads

SOT223



## NPN high-voltage transistor

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## DATA SHEET STATUS

DOCUMENT STATUS <sup>(1)</sup>	PRODUCT STATUS <sup>(2)</sup>	DEFINITION
Objective data sheet	Development	This document contains data from the objective specification for product development.
Preliminary data sheet	Qualification	This document contains data from the preliminary specification.
Product data sheet	Production	This document contains the product specification.

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## **Contact information**

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